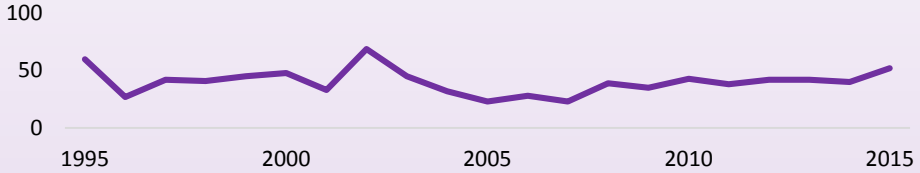
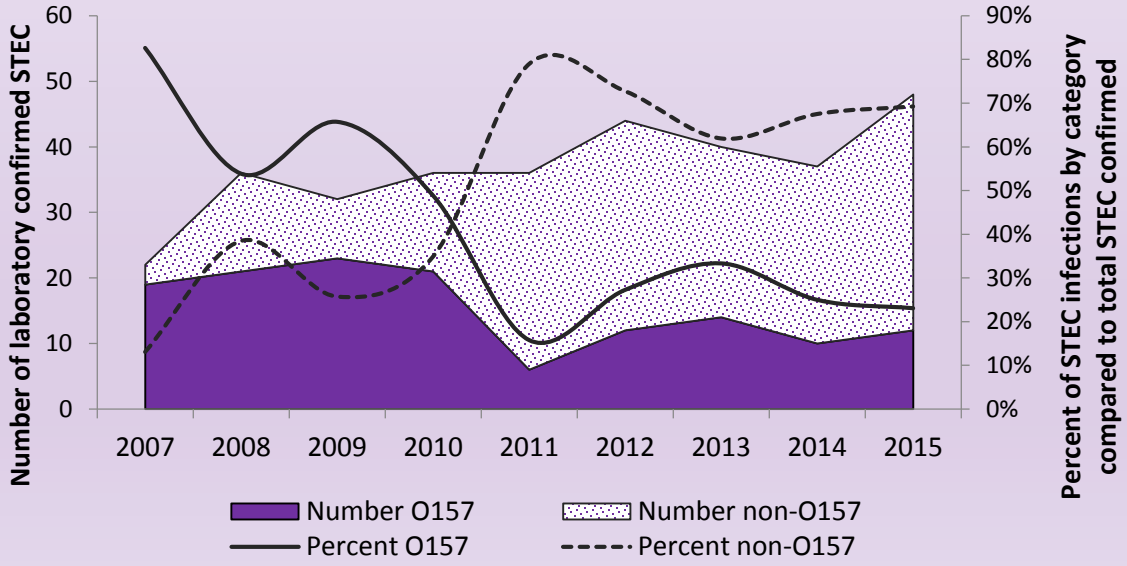
Shiga-toxin *E.*coli in Montana: The Importance of Modernization in Laboratory Analysis Tools

On average, **42** human cases of Shiga-toxin *E.*coli (STEC) are reported in Montana each year. The total number of STEC has remained mostly steady over the last 20 years.



Escherichia coli are divided into groups. The most feared has been O157:H7 because of severe complications leading to kidney failure. However, since 2011, only ¼ of all reported STEC cases are caused by O157:H7.

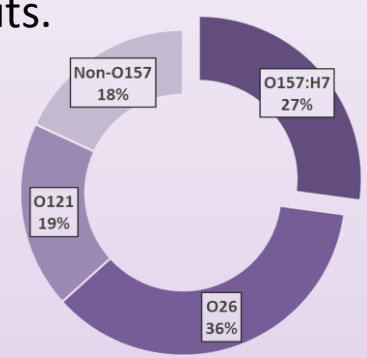


*Data derived from Montana Public Health Laboratory (MT PHL) 2009-2015

Shiga-toxins produced by *E.*coli damage the intestines and can cause bleeding and severe diarrhea as a result. Complications can lead to kidney failure, called hemolytic uremic syndrome (HUS).

In 2013, two cases of *E.*coli O121 were linked to a multi-state outbreak caused by contaminated clover sprouts.

In 2014, three young children developed HUS as a results of an *E.*coli O145 infection. They initially remained undiagnosed until complications developed and further testing was requested.



In 2015, a cluster of three *E.*coli O26 was detected because the local hospital switched to a more sensitive detection method.

In 2009, two out of three STEC infection were captured via methods that specifically detected *E.*coli O157:H7. Today only about 25% of all reported STEC infections would be diagnosed via those methods. Many illnesses remained undiagnosed, prohibiting public health from taking action and following up with ill individuals and possibly preventing outbreaks. New diagnostic methods, such as multiplex PCR have improved diagnostic capacity for all STEC infections.

MONTANA DPHHS
Healthy People. Healthy Communities.
Department of Public Health & Human Services